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of the head; the nucleus was small and not very well defined.

This comet differs considerably in general appearance from the comet now in *ursæ minor*. The head of B was large and broad, and its tail spread out greatly. Comet C has a small, narrow head with a very long slender shaft-like tail running from it in a straight line.

E. E. BARNARD.

NASHVILLE, TENN., August 26.

JUPITER.

The following cut represents the planet Jupiter on October 21st and October 29th, 1879, as seen with the 18½ inch Chicago refractor, with power 638.



The numbers on the right indicate the faint belts, which were systematically arranged on either side of the planet's equator.

The great Equatorial Belt, crossing the center of the disc, was composed of two separate belts, being divided by an irregular rift extending through the central portion. The color of this belt was reddish-brown-brick color, and the total width was 15,780 miles.

The great red spot shown in the center of the disc, on October 29th, was essentially of the same color as the equatorial belt, only more brilliant; it was about 30,000 miles in length and 8000 in breadth. Under fair atmospheric conditions, the equatorial belt was always visible up to the edge of the disc, with very slight diminution of color.

CORRESPONDENCE.

COMET *b*, 1881.

HARVARD COLLEGE OBSERVATORY,
CAMBRIDGE, U. S. September 13, 1881. }

To the Editor of "SCIENCE."

SIR:—The spectrum of comet *b*, 1881, according to Dr. Konkoly (*Observatory*, 53, p. 257) contains five bright bands. From the mean of measures made with different spectroscopes on different nights, their wave-lengths in millionths of a millimetre were found to be 560, 545, 515, 472 and 468. The first, third and fourth of these bands are evidently due to carbon and, as Dr. Vogel has shown, are coincident with those of the banded stars of Secchi's fourth type. The other two bands appear to coincide with those of LL 13412. Last winter the spectrum of this star was found to consist mainly of bands having wave-lengths 545, 486 and 466 (*Nature*, xxiii, 604). The line 486 is probably due to hydrogen. The singular kinship of comets and banded stars is thus confirmed by a star whose spectrum seems to be quite unique.

EDWARD C. PICKERING.

To the Editor of "SCIENCE."

About two weeks ago, I found that one of the turtles which I keep for experimental purposes, a *Chrysemys picta* had laid eggs; all but one of these had been devoured whether by the turtle itself (as I have known to be the case with the same species, when kept in captivity) or by some alligators living in the same tank I could not discover. The perfect egg, I imbedded in moist sand, after carefully washing it, and finding yesterday, that it had not undergone development, I opened it and to my surprise found a living maggot, the larva probably of the *Musca vomitoria*, creeping around actively in the space between the half dessicated yolk and the shell membrane. It measured about four millimeters in length. As it crawled out of the aperture in the shell which I had made I threw the specimen away as it did not show the original anomaly.

Analogous observations have been made in the chick's egg. Cases are not infrequent where one egg has enclosed another or even several eggs, legs of beetles, wisps of straw and other foreign bodies. But this I believe the first case where a living animal has been found in an egg. Of course the explanation of its presence is the same as in the case of the other substances referred to.

E. C. SPITZKA.

BOOKS RECEIVED.

ELEMENTS OF ALGEBRA, by G. A. WENTWORTH, A. M., PROFESSOR OF MATHEMATICS IN PHILLIPS EXETER ACADEMY, 8° BOSTON. Ginn & Heath, 1881; viii, 380 pp.

This addition to American algebra literature is the sort of book that is to be expected from a live teacher. It bears the stamp of experience upon it and gives evidence throughout of the one end and aim of teaching beginners in algebra the art of algebraic manipulation. We say the art rather than the science, because the aim is clearly to familiarize the pupil with the *art*, to teach him *how* to manipulate rather than to lay stress upon the reasons for the processes, the author being evidently a disciple of Thomas Hill in his belief "*Facts before reasoning*." This is shown by such statements as "From these it may be assumed, etc."; "It may be verified that, etc."

The author has paid "particular attention to brevity and perspicuity in definitions," a thing which cannot be too highly commended, and without which any algebra, however good in other respects, will not succeed.

This matter of definitions is, as every teacher understands, a very important matter, if not for the algebra itself, then at least as a matter of right training and clear thinking. Definitions should be memorized, but memorization is not enough; they must be thoroughly understood. With those teachers who do not agree with this view we will have no disagreement, for the student trained to thoroughly comprehend is generally found by that very process to have secured that definition in his memory. In a text book, therefore, which aims at clearness and brevity in definition, a valuable training is afforded the student by leading him to carefully weigh the definitions; to consider whether the definition can be curtailed without loss of clearness, or whether it be not already too brief to be intelligible; to consider whether it is too restricted or too extended in its application, etc.

With the view of emphasizing this important matter we shall call attention to some of the definitions in this book, and at the outset let us premise that the definitions of mathematical terms must conform to the usage of mathematicians. It is a well-known fact that certain features of text books, faults as well as excellencies, are faithfully reproduced. Witness the statement concerning the rotation period of one of the major planets, erroneously given in one of the earlier editions of "*Herschell's Outlines*," and this error faithfully copied into astrono-